

REMARKS

This responds to the Office Action mailed on September 29, 2005. Claims 1, 5, 6, 7, 8, 9, 13, 14, 20, 21, 22, 25, 26, 27, 28, 29, 30, 31, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 49, and 50 are amended, claims 32, 33, 34, 35, are cancelled, and claims 65-70 are added; as a result, claims 1-31 and 36-70 are now pending in this application. The amendments to the claims are to clarify the subject matter that applicants regard as their invention. The amendments were not made for a reason related to patentability. Thus, the Amendments do not create estoppel which would limit the claims. Accordingly, Applicant is entitled to a full range of equivalents upon issuance of the instant claims. No new subject matter is added.

§112 Rejection of the Claims

Claims 1-24, 26-35, and 43 were rejected under 35 U.S.C. § 112, second paragraph, allegedly for being indefinite. To the extent that this rejection may be maintained with respect to the pending claims, it is respectfully traversed.

Applicants have amended claim 1 to recite a method for preparing a cross-linked sol-gel from a sol-gel-material and a cross-linking agent. The terms sol-gel material and sol-gel like material are defined in Applicants' specification. (See page 3, line 2 to page 4 line 2.) Accordingly, it is submitted that claims 1-24, and 43 claims are not indefinite.

Claims 26-31 are directed to a cross-linked sol-gel having a specific percentage of cross-linking agent in the product. Claims 32-35 have been cancelled. Accordingly, any ambiguity has been removed.

Applicants respectfully request that the rejection under 35 U.S.C. § 112, second paragraph be withdrawn.

§102 Rejection of the Claims

Claims 1, 4-17, 20-36, and 39-64 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Kawakami *et al.* (U.S. 6,364,953 "the '953 patent"). To the extent that this rejection may be maintained with respect to the pending claims, it is respectfully traversed.

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. *In re Dillon* 919 F.2d 688, 16 USPQ 2d 1897, 1908 (Fed. Cir. 1990)

(*en banc*), cert. denied, 500 U.S. 904 (1991). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, "[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131.

Applicants submit that the '953 patent fails to disclose each element of the claim. The '953 patent fails to disclose the use of cross-linking agents as required by the instant claims. Applicants note that the Examiner admits that no cross-linking agents are disclosed in the '953 patent. (See Office Action page 4, 2nd paragraph lines 1-2.)

Applicants respectfully request that the rejection under 35 U.S.C. § 102 be withdrawn.

§103 Rejection of the Claims

Claims 2, 3, 18, 19, 37, and 38 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kawakami *et al.* (the '953 patent) as applied to claims 1, 4-17, 20-36, and 39-64 above, and further in view of Barsotti *et al.* (U.S. 6,428,898, the '898 patent). The Examiner alleges that the cross-linking agents of Barsotti can be used "in the preparations of Kawakami...". To the extent that this rejection may be maintained with respect to the pending claims, it is respectfully traversed.

The Office Action has not established a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference must teach or suggest all the claims limitations. MPEP § 2143. See also *In re Rouffet*, 47 USPQ2d 1453. The court in *Rouffet* stated that "even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill that suggests

the claimed combination." *Rouffet* at 1459. Further, even if the allegation of obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of the single reference. *B.F. Goodrich Co. v. Aircraft Breaking Sys. Corp.*, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996).

Applicants submit the examiner has failed to establish a *prima facie* case of obviousness. First, applicants submit that there is no suggestion of motivation to combine the cited documents as suggested by the Examiner. The Barsotti patent discloses the reaction of diol molecules with diisocyanate molecules. The '898 patent process is a process where the reactive groups are free to move around as they are only constrained by a flexible carbon chain. In the instant claims, the reactive groups are constrained on a skeletal framework, *i.e.*, the surface of a sol-gel material. Thus, to a person skilled in the art, it would not be obvious that the reaction could be successful in connecting the skeletal framework of the nano-particles of the sol-gel material together, based on the disclosures of the '953 patent or the '898 patent, taken alone, or in combination.

Further, if a person skilled in the art were to use the diisocyanates of Barsotti "in the preparations of Kawakami," as suggested by the examiner, (Office Action page 4, second paragraph.) implying that the reagents (sol-gel precursors, diisocyanate, etc.) are all mixed together in a single step, the reaction would not provide a product as claimed in applicants claims. The diisocyanate would react with the water in the preparation mixture and prevent the formation of the sol-gel material. Thus, to a person skilled in the art, there would not be an expectation of success, if the combination of the rejection were used.

Accordingly, it is respectfully submitted that the examiner has failed to establish a *prima facie* case of obviousness. It is respectfully requested that the rejection under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6968 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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By their Representatives,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 29 day of December, 2005.

Name

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Signature

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